

Instructional Timeline – Kindergarten Mathematics – 3rd Nine Weeks	
Unit 3C: Constructing and Using Graphs	
Suggested Time Frame: ≈ 2 weeks	
Introduction	The Instructional Timeline, as required by RRISD Local Board Policy (EG – Local, 246909), breaks down the content of each nine-week period into smaller, more manageable units of instruction.
Description	Students will construct and interpret graphs of real objects or pictures. Students will display math concepts using graphs of real objects, concrete models, or pictures in problem solving connected to everyday experiences and begin writing conclusions, making titles for graphs, and labeling data.
TEKS/SEs taught during this period	<p>K.12 Probability and statistics. The student constructs and uses graphs of real objects or pictures to answer questions. K.12A Construct graphs using real objects or pictures in order to answer questions K.12B Use information from a graph of real objects or pictures in order to answer questions.</p> <p>Ongoing – Using Math in the Real World</p> <p>K.6 Patterns, relationships, and algebraic thinking. The student uses patterns to make predictions. K.6B Count by ones to 100.</p> <p>K.11 Measurement. The student uses time to describe, compare, and order events and situations. K.11C Read a calendar using days, weeks, and months.</p> <p>K.12 Probability and statistics. The student constructs and uses graphs of real objects or pictures to answer questions. K.12A Construct graphs using real objects or pictures in order to answer questions K.12B Use information from a graph of real objects or pictures in order to answer questions</p> <p>K.13 Underlying processes and mathematical tools. The student applies Kindergarten mathematics to solve problems connected to everyday experiences and activities in and outside of school. K.13A Identify mathematics in everyday situations. K.13B Solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. K. 13C Select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking or acting it out in order to solve a problem. K.13D Use tools such as real objects, manipulatives, and technology to solve problems.</p> <p>K.14 Underlying processes and mathematical tools. The student communicates about Kindergarten mathematics using informal language. K.14A Communicate mathematical ideas using objects, words, pictures, numbers and technology. K.14B Relate everyday language to mathematical language and symbols.</p> <p>K.15 Underlying processes and mathematical tools. The student uses logical reasoning. K.15A Justify his or her thinking using objects, words, pictures, numbers, and technology.</p>

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Generalizations	<p>The student understands that:</p> <ol style="list-style-type: none"> 1. Information can be identified and explained in verbal and written form.
Essential Questions	<ul style="list-style-type: none"> • What is data? • How can we organize data? • What words help you write conclusions for your information?
Core Components	<p>Including Statements</p> <ul style="list-style-type: none"> ▪ Uses mathematical language appropriate to the situation ▪ Organizes information from lunch choices, daily attendance, ... ▪ Begins to explore using pictures when graphing information <p>Note to Kindergarten teacher:</p> <p>In kindergarten the focus is <i>real object</i> and <i>picture graphs</i>; <i>bar-type graphs</i> are introduced in 1st grade.</p> <p>With real object graphs and picture graphs, each cell represents exactly one of the real objects or whatever the pictures represent (1 piece of data). In 3rd grade, students are introduced to <i>pictograms/pictographs</i> and <i>bar graphs</i>, where a cell may be used to represent more than one piece of data.</p> <p>Kindergarteners may provide an appropriate title for their graphs and label the data.</p> <p>It is not until 3rd grade, when students use <i>pictographs</i> where pictures may represent more than 1 piece of data, that a legend or key is necessary. No legend or key is used for a picture graph or a real object graph.</p>
Curricular Connections (within, between, and among disciplines)	<p><u>Related Science TEKS</u></p> <p>K.2D record and organize data and observations using pictures, numbers, and words</p> <p>K.5A observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture</p> <p>K.5B observe, record, and discuss how materials can be changed by heating or cooling</p> <p>K.8A observe and record weather changes from day to day and over seasons</p>
Required Lessons	
Recommended Lessons and Learning Experiences	<p>Mathematics TEKS Connections Lesson Graphing Favorite Snack Time</p> <p>Math TEKS Refinement Lesson Problems Kids Care About – a graphing lesson</p> <p>Mathematics TEKS Toolkit – Clarifying Lesson Data Discovery (Centers)</p> <p>Mathematics TEKS Toolkit – Clarifying Activities Statistics</p> <p>NCTM Navigations-Navigating Through Data Analysis and Probability Grades PreK-2 (Look in Campus Library or order through i-Bistro District Library Catalog)</p> <ul style="list-style-type: none"> • “Build a Graph” page 15 • “What’s your favorite” page 18 • “All about shoes” page 25

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	<p>Also continue using any graphing Instructional Resources not used in unit K-1A (Investigations, enVision Math.)</p> <p>Engaged Learning Options:</p> <ul style="list-style-type: none"> • Write-to: Teacher models writing a survey and takes it through the writing process; include modeling how to publish results with a graph • Children survey classmates, other classes, or school staff
Differentiation:	<p><u>English Language Proficiency Standards Student Expectations with Sentence Stems and Activities to support implementation of the Standards</u> (Note: when you open the link, it may ask you for a certificate or if it is OK to open the file, click OK each time you see the screens.)</p> <p>Less Depth/Complexity</p> <ul style="list-style-type: none"> • Small group and partner with peer model • Continue using real objects <p>More Depth/Complexity</p> <ul style="list-style-type: none"> • Begin to write own surveys and publish results with a graph • Organize data in picture graphs, Venn diagrams or T-charts, using real objects or pictures
Instructional Resources	<u>Round Rock ISD Elementary Mathematics Webpage</u>
Assessment Resources	Acces4 Database – Consult campus Instructional Technology Specialist for assistance with accessing Acces4 database.